Category: 4 – Best Building Project | Specialty Contractor (Under $2M)

Specialty Contractor: Weifield Group Contracting

Project Name: Westminster Pump Stations Improvements

The City of Westminster Pump Stations Improvements project is one of many projects the City of Westminster initiated in recent years to provide a reliable water supply for their more than 100,000 customers; the owner's main driver behind this project was to maintain a better pressurized water system for the city. Weifield's work on this design-assist project encompassed improvements at four different pump station facilities (Jim Baker, Silo, North Park & Wandering View pump stations), as well as the associated electrical and instrumentation work.

Because this project included a water utility, the riskiest part of the project was making sure water operations would be available at the time the owner needed them. We couldn't start the project until the water demand was low, in the fall; there was additional pressure due to a two-week delay at start of the project due to interruptions with another city contract. The following outlines the scope of work at each of the four pump stations:

Jim Baker Pump Station: The aeration blower building at this small pump station, housing the equipment and instrumentation, needed to be replaced. Weifield removed the existing equipment and reinstalled all of the existing control panels and equipment in the rebuilt facility. We also installed a new PLC and two VFD's that served two new submersible pumps, added a new level transmitter to an existing parshall flume, and installed new radio telemetry.

Silo Pump Station: Weifield removed the existing service equipment in this pump station and replaced it with a 480V distribution panel, step-down transformer, and low-voltage power panel – and also modified the existing HVAC system.

North Park Pump Station: The North Park and Wandering View pump stations were located on the same property. North Park was an existing underground pump station which Weifield brought inside the Wandering View building—combining the two pump stations into one—adding pumps, electrical, and VFD to it, upon relocation.

Wandering View Pump Station: This was the largest piece of the project that involved a major renovation of the pump station in order to combine two pump stations into one. Weifield removed all of the electrical from the existing building and installed new electrical for upgraded service and controls, and completed numerous other tasks, including: gutting and rebuilding the large pump station building, removing the underground vault, installing all-new lighting, a new electrical service, and a brand-new SCADA system, decommissioning and replacing the existing electrical gear with new gear, replacing three existing high service pumps, installing all new instrumentation, a service-rated ATS, a brand-new 600kW generator, and more.

The most challenging aspects of the project were the logistics associated with the different project sites which required varying levels of electrical effort.

"Weifield was thoughtful about their scheduling and provided the City with sufficient time to plan for temporary shut-downs and other critical activities," said Julie Koehler, City of Westminster Senior Engineer. "There was an underlying feeling that Weifield was on top of it, knew what their job was and what others' jobs were—and where they fit in—and knew how to resolve conflicts ahead of time. I'm not an electrical person and Weifield could explain issues in terms I could understand."

Solutions of Special Projects

Ensuring Continuous Operations: Weifield had to maintain operations of the Wandering View and North Park pump stations while combining the two pump stations into one—so several

precautions were taken to ensure the water supply was continually operable and the changeover went smoothly, such as providing a temporary utility service to North Park while Wandering View renovations were in-process.

Another unique thing that Weifield did was to develop the scope of work and plan the project from the start with Burns & McDonnell Engineering, while they designed the project. Garney Construction (General Contractor) allowed Weifield to work directly with Burns & 9McDonnell for this purpose—which helped to expedite project phases.

Excellence in Project Execution and Management/Team Approach

Constant Communication to Keep Pace with Changes: In addition to standard weekly OAC meetings, we held regular weekly meetings with the owner, the owner's engineer, the GC, and the integration/controls subcontractor; these meetings proved to be very productive as often there were spin-off meetings that would arise to discuss other issues.

Field Supervisor Rod Chapman would hold daily huddles with his team as well as meet with the GC's superintendent at least daily to discuss current activities and modify plans as appropriate. Chapman developed a schedule outlining the tasks that were to occur in each upcoming three-week period; however, due to fluctuating project requirements, this schedule changed continuously.

Weifield avoided pitfalls by asking questions ahead of time, mitigating project risks before they became issues, and devising alternative ways of doing things more cost-efficiently.

"Weifield was always prepared, asked the right questions, and were always able to respond confidently and accurately to questions regarding their work," said Koehler.

Driving the Schedule: Due to congested job sites, the schedule (encompassing three different locations in Denver and Westminster) had to be precisely coordinated in order to accommodate logistics and ensure timely execution—there was no room for variance.

Weifield drove the schedule by setting hard delivery dates and staying immersed in the owner's scheduling. The schedule included heavy gear installation of a very large generator and new service equipment—so we continually reminded the GC at weekly meetings of the need for preparation in order to stay ahead of issues.

"Weifield was very on top of details; as a manager, that's wonderful to have confidence that they were correct—and they were," said Koehler.

Construction Innovations / State-of-the-Art Advancement

Exceeding Quality Expectations: As the project had no drawings or specifications, prior to each phase, the owner requested that Weifield submit our start-up forms for preapproval by the owner and the engineer to ensure our quality standards aligned with theirs. There was also substantial oversight on-site by the owners' electrical staff—in effect, Weifield was inspected by the owner's electrical staff and the City inspector on all phases of the project. Weifield went above and beyond to satisfy all requirements and realize the owner's vision.

As the work was being done in a residential area, there were noise requirements to follow and traffic control issues/delays to deal with, as well, as the City had to shut down a major highway and neighboring streets to allow heavy equipment to get in and out of the project site. There were multiple shutdowns to accommodate the delivery of the large generator, on-site, and other tasks such as concrete pours. Weifield had to be nimble with our scheduling to navigate around these activities.

Value-Engineering: Despite having no drawings, Weifield designed to meet the budget and performed substantial up-front comparison cost analysis to ensure the budget could be maintained. Due to our preliminary cost analysis, the owner was able to add in some additional bells and whistles while still meeting the budget.

From a power perspective, adding variable frequency drives (VFD's) lowered the owner's utility costs as they helped make the system more effective and efficient by maintaining a better pressurized system for the community--with no drops in water pressure. We also found a

lot of corrosion in the water tanks and other issues, as well; the owner was able to resolve these issues during construction while still maintaining operations.

Environmental/Safety

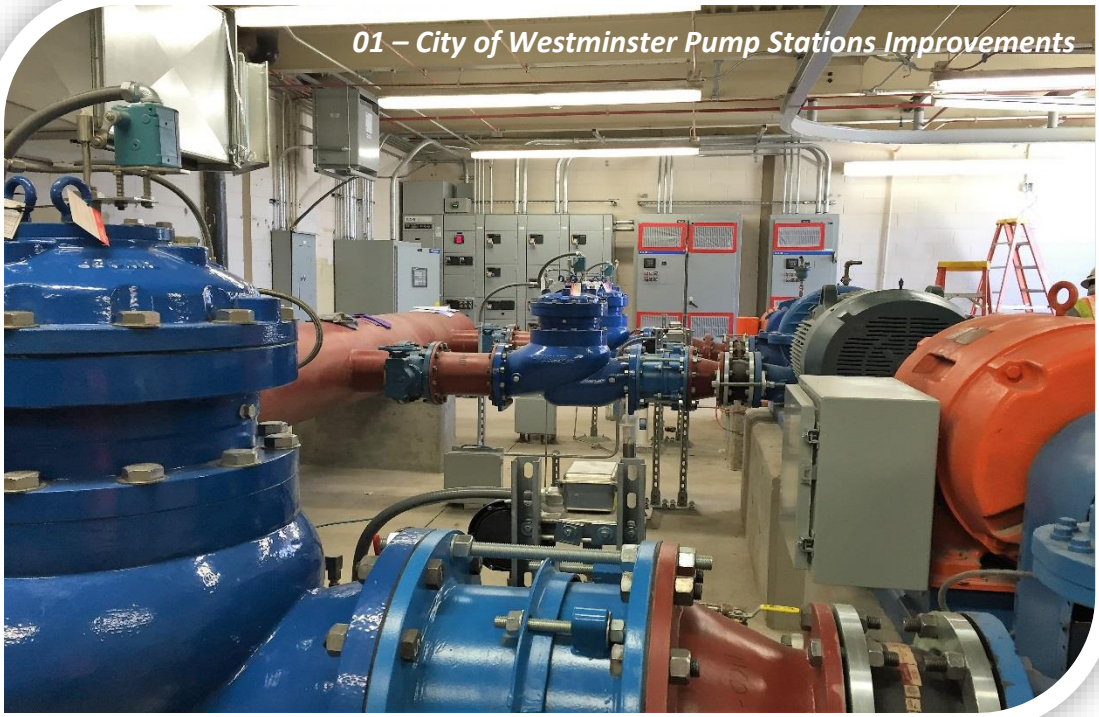
Weifield experienced no safety accidents/incidents, down time/lost time or violations on the project due to our focus on our Project Safety Program (PSP) which outlines our comprehensive project safety procedures. We executed stringent lockout/tagout procedures for energized circuits and followed our PSP to the letter for each phase of the project. There was substantial excavation on the very small site; we had to be vigilant and alert not only due to site congestion but inside the buildings, as well, as floors were torn out and around other holes and exposures.

Excellence in Client Service

In the end, Weifield was awarded additional work by both Garney Construction (GC) and the owner as a result of our performance on this project.

"We made the GC's life easier by providing them with our schedules, constant and regular communication, and satisfying any requests to retask work based on their needs," said Curtis Miller, Weifield VP of Industrial and Infrastructure. "The GC was very satisfied with our performance. This project also secured us as a contractor that the City of Westminster wants to work with again."

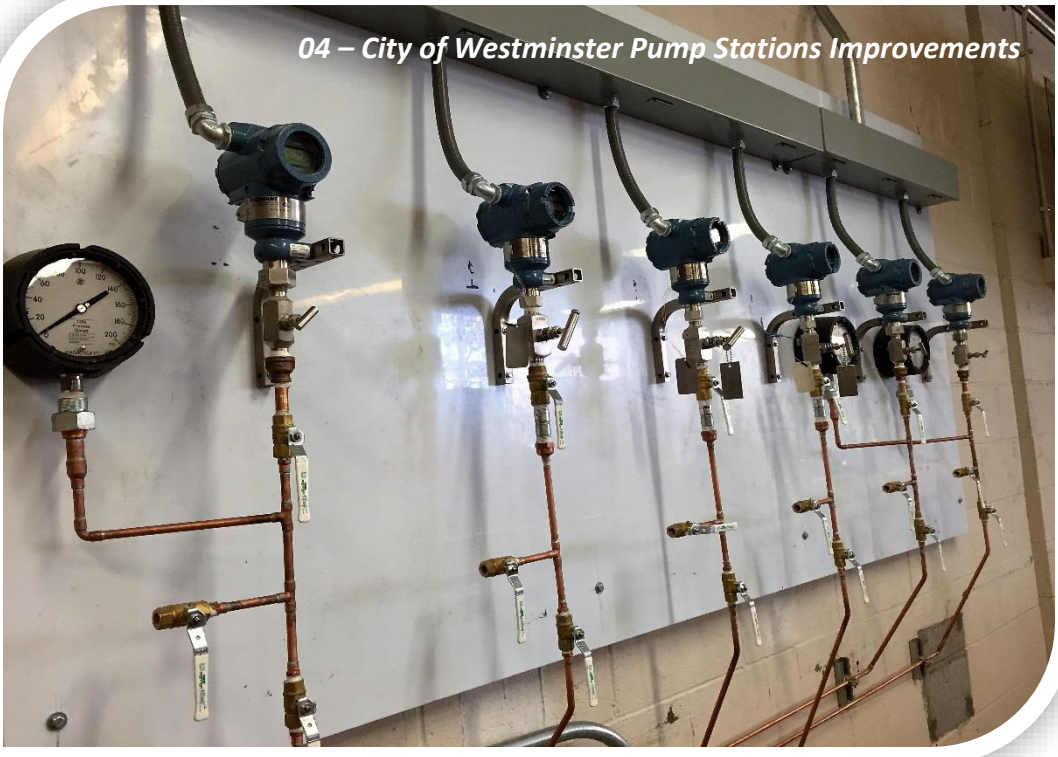
"I've worked with plenty of electricians--one of the nice things is that Weifield gets everyone involved in their projects, including Curtis Miller, who is a VP—so from a field aspect, that's very nice," said Michael Huff, Garney Construction Superintendent. "The owner had a lot of involvement on the electrical side and was constantly changing things up, even saying they said they didn't want certain things after they were installed. There were a lot of electrical changes, and Weifield went above and beyond to accommodate the changes with no impact to the schedule and without adding on costs. They did a fantastic job."



01 – City of Westminster Pump Stations Improvements

02 – City of Westminster Pump Stations Improvements


03 – City of Westminster Pump Stations Improvements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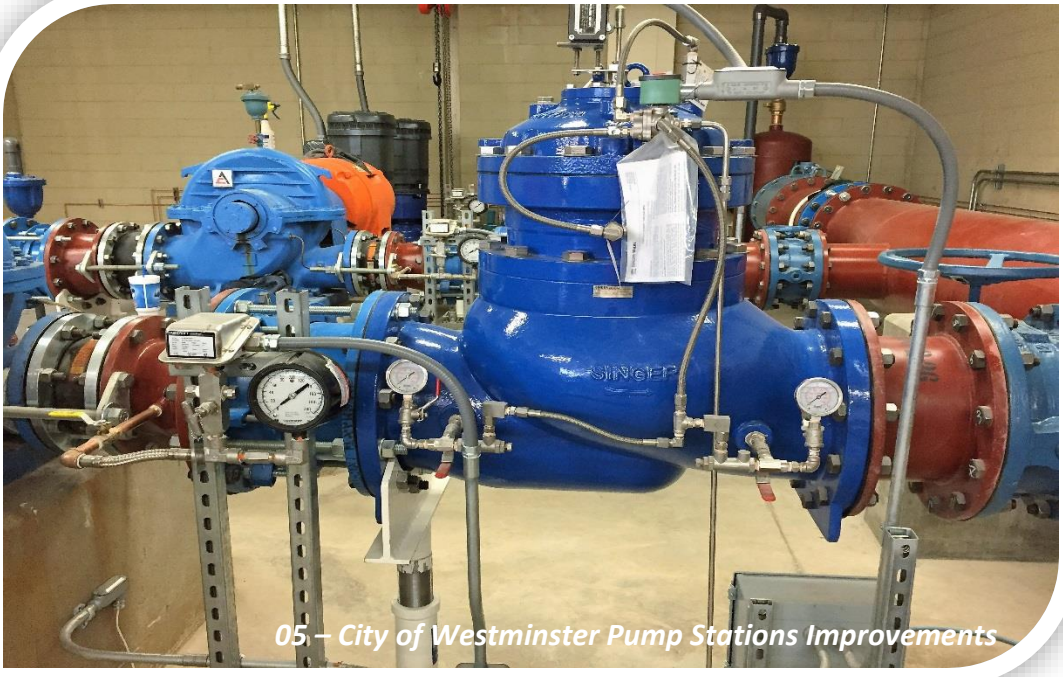

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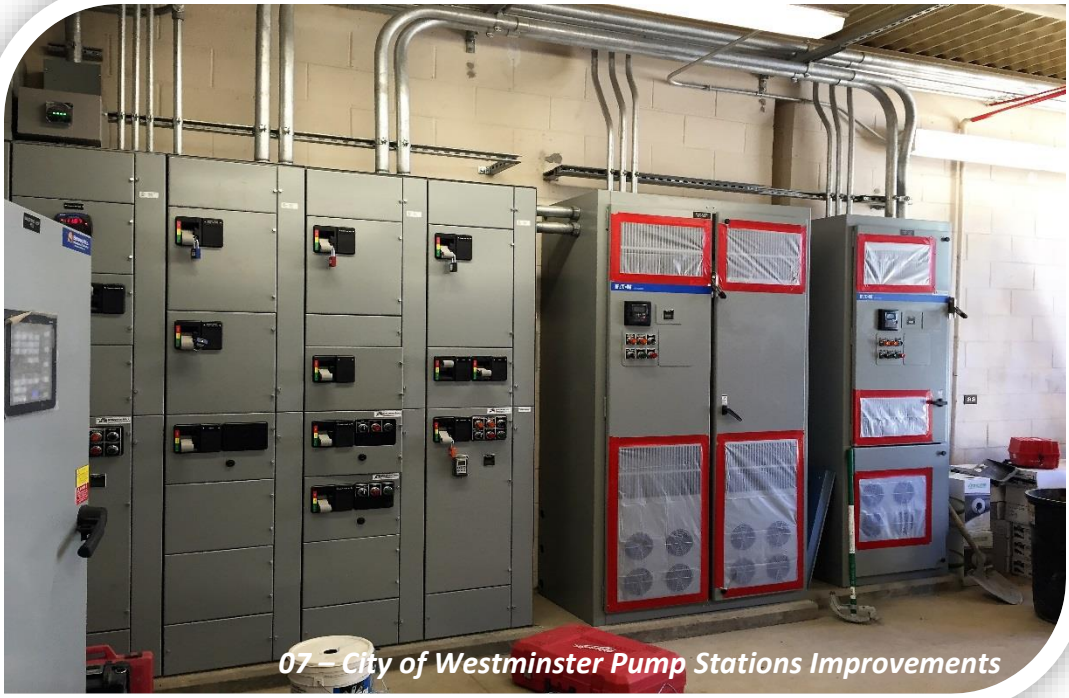

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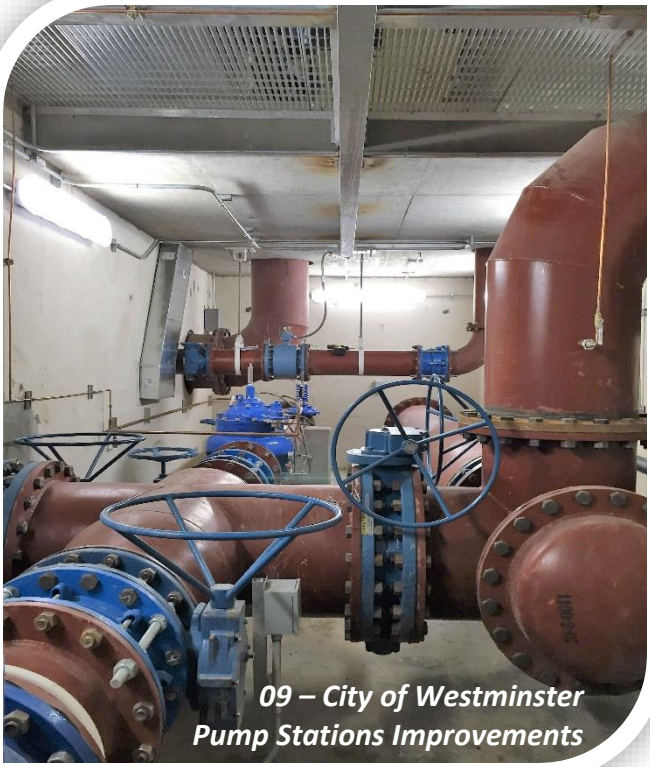

09 – City of Westminster Pump Stations Improvements

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